

In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

- 1        1. (Currently Amended) A method of generating energy profiles for a specific task in a processing device executing multiple tasks, comprising the steps of:
  - 4            receiving a first task identifier indicative of an active task in a processing component;
  - 6            receiving hardware activity signals each indicative of a hardware event in the processing device;
  - 8            storing a second task identifier indicating a task to be monitored;
  - 10          comparing the first and second task identifiers and generating a predetermined signal if the first and second task identifiers match;
  - 13          measuring activity ~~of certain devices responsive to corresponding to the task to be monitored by counting hardware activity signals received during generation of~~ said predetermined signal.

2 and 3. (Canceled)

- 1        4. (Currently Amended) The method of claim 3 ~~wherein 1 further comprising:~~  
~~said updating step comprises the step of periodically updating with a period T an energy profile responsive to said measuring step during operation of said processing device.~~

- 1        5. (Original) The method of claim 4 and further comprising the step of executing a plurality of tasks in accordance with a scenario defining scheduling of said plurality of tasks and

4 modifying said scenario responsive to said step of updating an  
5 energy profile.

1       6. (Original). The method of claim 1 and further comprising  
2 the step of performing a debugging operation responsive to said  
3 measuring step.

1       7. (Currently Amended) A processing device for multitasking  
2 multiple tasks comprising:

3       circuitry for receiving a first task identifier selected from  
4 among a plurality of possible task identifiers indicative of an  
5 active task in a processing component;

6       circuitry for receiving hardware activity signals each  
7 indicative of a hardware event in the processing device;

8       a memory for storing a plurality of second task identifier  
9 indicating identifier, each second task identifier corresponding to  
10 a task to be monitored;

11      a comparator for comparing the first and second task  
12 identifiers and generating a predetermined second task identifier  
13 match signal if the first task identifier matches and a  
14 corresponding one of said second task identifiers match;

15      ~~circuitry for measuring activity of certain devices responsive~~  
16 ~~to said predetermined signal a plurality of counters, each counter~~  
17 ~~corresponding to one of said stored plurality of second task~~  
18 ~~identifiers, each counter enabled to count said hardware activity~~  
19 ~~signals when said comparator generates a corresponding~~  
20 ~~predetermined second task identifier match signal.~~

8 and 9. (Canceled)

1       10. (Currently Amended) The processing device of claim 9 7  
2 wherein:

3        said processing device is operable to periodically update with  
4    a period T an said energy profile is updated from counts of said  
5    plurality of counters during operation of said processing device.

1        11. (Original) The processing device of claim 10 wherein said  
2    plurality of tasks are executed in accordance with a scenario  
3    defining scheduling of said plurality of tasks and said scenario is  
4    updated responsive to said step of updating an energy profile.

1        12. (Currently Amended) The processing device of claim 7 and  
2    further comprising circuitry for implementing a debugging operation  
3    responsive to a value values in said ~~measuring circuitry~~ plurality  
4    of counters.

13. (Canceled)

1        14. (New) The method of claim 1 wherein:  
2        said hardware event in the processing device includes a cache  
3    miss.

1        15. (New) The method of claim 1 wherein:  
2        said hardware event in the processing device includes a  
3    translation lookaside buffer miss.

1        16. (New) The method of claim 1 wherein:  
2        said hardware event in the processing device includes a non-  
3    cacheable memory access.

1        17. (New) The method of claim 1 wherein:  
2        said hardware event in the processing device includes a wait  
3    time.

1       18. (New) The method of claim 1 wherein:  
2            said hardware event in the processing device includes a  
3 read/write requests for a predetermined resource.

1       19. (New) The method of claim 4 wherein:  
2            said period T corresponds to a thermal time constant of the  
3 processing device.

1       20. (New) The processing device of claim 7 wherein:  
2            said hardware event in the processing device includes a cache  
3 miss.

1       22. (New) The processing device of claim 7 wherein:  
2            said hardware event in the processing device includes a  
3 translation lookaside buffer miss.

1       23. (New) The processing device of claim 7 wherein:  
2            said hardware event in the processing device includes a non-  
3 cacheable memory access.

1       24. (New) The processing device of claim 7 wherein:  
2            said hardware event in the processing device includes a wait  
3 time.

1       25. (New) The processing device of claim 7 wherein:  
2            said hardware event in the processing device includes a  
3 read/write requests for a predetermined resource.

1       26. (New) The processing device of claim 10 wherein:  
2            said period T corresponds to a thermal time constant of the  
3 processing device.